



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/594,009	09/25/2006	Kenichi Miyaguchi	1163-0584PUS1	8856
2292 7590 05/05/2008 BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747				
EXAMINER LE, DON P				
ART UNIT 2819		PAPER NUMBER		
NOTIFICATION DATE 05/05/2008		DELIVERY MODE ELECTRONIC		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

Office Action Summary

Application No.

10/594,009

Applicant(s)

MIYAGUCHI ET AL.

Examiner

Don P. Le

Art Unit

2819

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 September 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-8 and 14-18 is/are allowed.
- 6) ☒ Claim(s) 9 and 19 is/are rejected.
- 7) ☒ Claim(s) 10-13 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/S5108)
Paper No(s)/Mail Date 9/25/2006
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 9 and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by Wallace et al. (US 6,137,377).

3. With respect to claim 9, figure 11 of Wallace discloses a phase-shifting circuit comprising:

an input terminal (RF INPUT) of a high frequency signal;

an output terminal (at output terminal of C2) of the high frequency signal;

a through/open switching element (T1) which is connected across said input terminal and said output terminal, and sets a transmission line at a through state or open state in response to a control voltage;

a first inductor (L1) having its first terminal connected to said input terminal;

a second inductor (L2) having its first terminal connected to said output terminal;

a through/shunt capacitance switching element (C3, T3, L3) which is connected (connected through R2, R3, T2) to a second terminal of said first inductor

and to a second terminal of said second inductor, and sets a transmission line in a through state or capacitance state in response to a control voltage; and

applying means of control voltages for establishing a first operation mode and a second operation mode by switching between them, said first operation mode setting said through/open switching element and said through/shunt capacitance switching element at a through state simultaneously, and said second operation mode setting said through/open switching element at an open state and said through/shunt capacitance switching element at a capacitance state.

4. With respect to claim 19, figure 11 of Wallace discloses a plurality of phase-shifting circuits which are connected in multistage fashion and each operates as a 1-bit phase-shifting circuit.

Allowable Subject Matter

5. Claims 1-8 and 14-18 are allowed.

6. Claims 10-13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. The following is an examiner's statement of reasons for allowance:

with respect to claim 1, the prior art does not teach a phase-shifting circuit comprising: an input terminal of a high frequency signal; an output terminal of the high frequency signal; a first parallel circuit which is connected across said input terminal and said output terminal, which is composed of a first inductor and a first

switching element that exhibits a through state or resistive property in an ON state and a capacitive property in an OFF state, and which produces parallel resonance at a prescribed frequency when said first switching element is in the OFF state; a series circuit which is connected in parallel with said first parallel circuit, and which is composed of a second inductor and a third inductor that have a reactance sufficiently larger than a resistance of said first switching element in the ON state; a capacitor having its first terminal connected to a point of connection of said second inductor and said third inductor; a second parallel circuit which is connected across a second terminal of said capacitor and a ground, which is composed of a fourth inductor and a second switching element that exhibits a through state or resistive property in an ON state and a capacitive property in an OFF state, and which produces parallel resonance at a prescribed frequency when said second switching element is in the OFF state; and applying means of control signals for establishing a first operation mode and a second operation mode by switching between them, said first operation mode setting said first switching element at the ON state and said second switching element at the OFF state, and said second operation mode setting said first switching element at the OFF state and said second switching element at the ON state.

With respect to claims 10-13, the prior art does not teach an apparatus having the structure as claimed.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Don P. Le whose telephone number is 571-272-1806. The examiner can normally be reached on 7AM - 5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Barnie Rexford can be reached on 571-272-1812. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Don P Le/
Primary Examiner, Art Unit 2819
4/26/2008